ALGO 5 – In-Service Objectives

• Understand ALGO 5 AABR™ technology
• Select appropriate baby for screening
• Set-up the ALGO 5 screener
• Prepare a baby for screening
• Enter patient information or retrieve a record
• Enter risk factors
• Run an ALGO 5 newborn hearing screen
• Troubleshoot common screening issues
• Correctly clean-up and shut-down the ALGO 5

ALGO 5® AABR® Technology
(automated auditory brainstem response)

• Soft click sounds at 35 dB nHL
  ▪ Sweep – the instance in which the screener delivers a click and receives a response to the click
• Advanced signal processing technology
• Automated results
  ▪ PASS
  ▪ REFER
ALGO 5 – Screener Components

- Screening module with computer/monitor and keyboard
- Cable assemblies
- Label printer
- Screening station cart
- Barcode scanner and printer (optional)

ALGO 5 – Cable Assemblies and Supplies

- Acoustic Transducer Assembly 5 or ATA5
  - Please note that these cable ends contain calibrated components and should be treated with care.

- Flexicoupler Earphones

ALGO 5 – Cable Assemblies and Supplies

- Patient Cable Assembly 5 or PCA 5
  - Attach clip to purple colored portion of the Jelly Tab Sensor

ALGO 5 – PCA clip alignment to Jelly Tab

- Jelly Tab Sensors
  - Ensure that part of the PCA clip with the wire is at the bottom.
  - Correct = wire and patient side of electrode on same side
ALGO 5 – PCA clip alignment to Jelly Tab

Ensure that part of the PCA clip with the wire is at the bottom.

Incorrect = wire and patient side of electrode on opposite side

ALGO 5 – DSP Box

When connecting the PreAmp to the DSP ensure that the arrows align on the cable and the DSP connectors.
Do not force the connection.
Do not twist the cable while connecting.
A small audible click should be heard when the connection is made.

ALGO 5 – Preamplifier Cable

ALGO 5 – Setting Up the Screener

1st Main power switch (on back side of mast)
2nd Computer power switch
3rd Printer power switch
**Power switch for Panel PC**

- **White PC version**
  - Computer power switch (center button)
  - Main power switch (on back side of column)

- **Silver PC version**
  - Computer power switch (on side of panel)
  - Main power switch (on back side of column)

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**ALGO 5 – Login Window**

- User Name
- Password

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**ALGO 5 – Main Window**

- Welcome to the ALGO5

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**ALGO 5 – Help Window**

- Impedance and Barrier Parameters
  - Notepad
  - Main Window
  - Support Functions
ALGO 5 – Selecting a Baby

- Important factors in choosing a baby in a favorable state:
  - Term, healthy newborns
  - NICU graduates, 34 weeks gestational age or older
  - Newborns with normal outer ear anatomy and no obvious deformities of the head or neck
  - Ready for discharge, or scheduled to go home within a few days
  - NOT receiving central nervous system (CNS) stimulants
  - Sleeping or in a relaxed state (usually after a recent feeding)
  - In an open crib
Please ensure that the ATA cables do not cross directly over an electrode.

Correct clip attachment: Clip is attached to the purple tab portion of sensor only.

Incorrect clip attachment: Clip touches hydrogel portion of sensor.

Identify Three Sites for Sensor Placement and Evaluate Skin

Place Sensors Over the Sites

**Vertex Sensor**
Black PCA Clip

**Nape Sensor**
White PCA Clip

**Common Sensor**
Green PCA Clip
ALGO 5 – Preparing the Baby for Screening
Attach ATA Cable to Flexicouplers and Apply Flexicouplers to the Baby

ATA 5 Cable “clicks” into Flexicoupler Earphones

Tab towards the back of the head

ALGO 5 – Patient Data Window
Required fields highlighted with colored background

ALGO 5 – Patient Data Window
NO Previous Screening History
ALGO 5 – Patient Data Window WITH Previous Screening History

ALGO 5 – Risk Factors

ALGO 5 – Screening Method Selection

ALGO 5 – Preparing the Baby for Screening
Identify Three Sites for Sensor Placement and Evaluate Skin

JCIH 2007 Position Statement recommendation for bilateral screening

Left Ear Only and Right Ear Only must be enabled by the program administrator
**ALGO 5 – Preparing the Baby for Screening**

Check Impedance

- Check impedance values
- Make sure impedance is within normal range

**Zero Impedance warning**

Impedance of 0.0Ohms has been detected. If the baby is connected, please click "Stop" and call Technical Service immediately as this usually indicates an issue with your hardware. **NOTE**: If you are not testing a baby and are connected to the Check Kit, then this warning is expected and you should click "Continue".

Important: Screening should not continue in this situation.

**ALGO 5 - Running the Screening Procedure**

- Time, Date of the Screen
- Patient MRN
- Testing Underway
- Testing Complete
- Impedance Readings
- Myogenic and Ambient Interference

**ALGO 5 – Running the Screening Procedure**

Screening method: AABR 35 dB SPL, L/R Simultaneous

Testing Underway

- Right Ear: Testing
- Left Ear: Testing

Testing Complete

Impedance Readings

- V1, V2, V3, V4

Myogenic and Ambient Interference

- Right Ear
- Left Ear
ALGO 5 – Monitoring Interference

ALGO 5 – SWEEP Count and Likelihood Ratio

ALGO 5 – Observe and Record Results

ALGO 5 – Printing Results
**ALGO 5 - Rescreening**

**ALGO 5 – Clean Up**

- **Remove PCA clip from Jelly Tab Sensors**
  - Clean PCA Cable
  - *Please use care in handling critical components such as the cables as they can be easily damaged*

- **Remove Flexicoupler earphones and ATA Cable**
  - Discard used Flexicoupler earphones
  - Clean ATA Cable
  - *Do not tap transducer tips on any surface to dislodge internal debris. Do not insert any instrument inside the transducer tips. The delicate cable ends are calibrated and can easily be damaged.*

- **Remove Jelly Tab Sensors from baby**
  - Discard used Jelly Tab Sensors

**ALGO 5 – Shut Down**

- **Main power switch** (on back side of column)

**Cable storage**

Note the options for cable storage available here:

- **Hang the preamp and ends of the cables on the hooks provided at the back**
- **Place the preamp on its hook and the ends of the cables in the drawer**
- **Place preamp and cables in the cable tray on the side of the cart**

Using these methods to store and protect the cables will preserve the delicate cable ends.
ERROR MESSAGES
- IMPEDANCE BETWEEN NAPE AND COMMON IS TOO HIGH. PLEASE CHECK ELECTRODES.
- ELECTRODE IMPEDANCE IS TOO HIGH. PLEASE CHECK ELECTRODES.
- IMPEDANCE BETWEEN VERTEX AND COMMON IS TOO HIGH. PLEASE CHECK ELECTRODES.
- NAPE AND VERTEX SENSORS ARE REVERSED. CORRECT CLIP PLACEMENT AND RE-SCREEN.

ALGO 5 – Reprepping Technique

• Prep with NuPrep gel
  ▶ Wait for sensors to settle for 2 to 3 minutes
• Place a small drop of saline on each site and reapply sensor
• If readings are still too high, remove all three Jelly Tab sensors and discard
  ▶ Get a fresh set of Jelly Tab sensors
  ▶ Reprep the three Jelly Tab sensor sites again using NuPrep gel, place the sensors, and recheck readings
• In exceptional cases try an alcohol swab (if permitted by your nursery protocol)
  ▶ Allow alcohol to dry thoroughly and follow with a wet wash with gauze
  ▶ Then prep with NuPrep gel before placing the sensor
ALGO 5 – Ambient Interference

ALGO 5 – Myogenic Interference

ALGO 5 – Equipment Check

ALGO 5 – Technical Support

- USA and CANADA
  - 650-802-0400
  - 800-303-0306
  - technical_service@natus.com

- Europe/Middle East/Africa Region
  - Genesys Medical Solutions Ltd., UK
    - Eurosrience@Genesysmedicalssolutions.com
    - Tel: +44 870 600 9940
    - Fax:+44 870 600 9941

- Asia Pacific Region
  - Scanmedics PTY Ltd., Australia
    - Tel: + 61 2 9882 2088
    - scanmedics@bigpond.com

- Please have your device model and serial number available when calling technical support.
ALGO 5 – In-Service Summary

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ALGO 5 – Natus Website Education and Support Tools

• www.natus.com
• In-service documents
  ▶ ALGO 5 Post-test
  ▶ ALGO 5 Competency check-list
• Infant Prep Tutorial Video
• Quick Guides
  ▶ ALGO 5 Quick Start
  ▶ ALGO 5 Troubleshooting
  ▶ ALGO 5 Tips for Successful Screening
• Additional support documents
  ▶ Parent education
  ▶ ALGO 5 Policy/Procedure
  ▶ ALGO 5 Frequently Asked Questions